

Current Status of Claims

1. (original)

A method for individually transporting articles (1; 2; 87;109) of different type, size, weight, material or shape, to one delivery location of a plurality of delivery locations (3, 4, 5; 6, 7) that is designated for the respective article, characterised in the steps of:

- identifying each article (1; 2; 87; 109) as regards its type of material prior to placing the identified articles one by one in a respective one of a plurality of transport containers (10; 60; 74, 79; 82; 99),
- providing television camera inspection of the articles one by one from a location above the transport path of the articles (1; 2; 87;109) to establish that just one article is placed or is present in a respective dedicated transport container, and
- causing the respective article (1; 2) at its designated delivery location to be discharged from its transport container to a collecting or storage bin, disintegrator or further conveyor (3, 4, 5; 6, 7) dedicated to the article; said discharge of the article from the container being made under the effect of gravity or with the aid of a separate, controlled actuating means.

2. (original)

A method according to claim 1, wherein the transport container (10) at the designated delivery location is made to invert in the course of rotating the container through an angle of 360° about an axis of rotation so as to discharge the single article from the container under the effect of gravity.

3. (original)

A method for individually transporting articles (1; 2; 87;109) of different type, size, weight, material or shape, to one delivery location of a plurality of delivery locations (3, 4, 5; 6, 7) that is designated for the respective article, characterised in the steps of:

- identifying each article (1; 2; 87; 109) as regards its type of material prior to placing the identified articles one by one in a respective one of a plurality of transport containers (10; 60; 74, 79; 82; 99), and
- discharging the respective article (1; 2) at its designated delivery location from its transport container to a collecting or storage bin, disintegrator or further conveyor (3, 4, 5; 6, 7) dedicated to the article, said discharging provided by inverting the transport container (10) in the course of rotating the container through an angle of 360° about an axis of rotation so as to discharge the single article from the container under the effect of gravity.

4. *(original)*

A method for individually transporting articles (1; 2; 87;109) of different type, size, weight, material or shape, to one delivery location of a plurality of delivery locations (3, 4, 5; 6, 7) that is designated for the respective article, characterised in the steps of:

- placing identified articles (1; 2; 87; 109) one by one in a respective one of a plurality of transport containers (10; 60; 74, 79; 82; 99),
- discharging the respective article (1; 2) at its designated delivery location from its transport container to a collecting or storage bin, disintegrator or further conveyor (3, 4, 5; 6, 7) dedicated to the article, said discharging provided by inverting the transport container (10) in the course of rotating the container through an angle of 360° about an axis of rotation so as to discharge the single article from the container under the effect of gravity, the rotation of the transport container being controlled by a plurality of guide pins (41, 45 – 47) on the container (10), at least one (41) of the guide pins, on cooperation with a movable and selectively controllable guide flap (15; 16; 17) mounted at the delivery location, causing an initial turning of the container, and at least one further guide pin (45 -47) on the container in cooperation with a stationary toothed engaging element (40; 48 -52) at the delivery location causing controlled rotation of the container.

5. *(original)*

A method according to claim 1, wherein further television camera inspection of the transport containers includes at least one of:

- i) determining that discharging of an article (1; 2; 87;109) at designated article delivery location causes the transport container to be fully emptied,
- ii) determining that the article (1; 2; 87;109) is not a strange article, and
- iii) determining that the article (1; 2; 87;109) is in a unitary state when in its container.

6. *(currently amended)*

A method according to claim 1 [~~or 5~~], wherein said television camera inspection is made from a location above the transport path of the articles.

7. *(currently amended)*

A method according to claim 2 [~~or 3~~], wherein rotation of the transport container is performed in a controllable manner and temporally actuated by force.

8. *(currently amended)*

A method according to [~~one of claims 1,2 or 3~~] **claim 1**, wherein the transport containers are prevented from rotation in horizontal portions of the circular path, except at the designated article delivery location related to a specific container, by allowing guide pins (41) on both sides of the container to form anti-rotation supports.

9. *(original)*

A method according to claim 2, wherein the rotation of the transport container is controlled by a plurality of guide pins (41, 45 – 47) on the container (10), where at least one (41) of the guide pins, on cooperation with a movable and selectively controllable guide flap (15; 16; 17) mounted at the delivery location, causes an initial turning of the container, and wherein at least one further guide pin (45 -47) on the container in cooperation with a stationary toothed engaging element (40; 48 -52) at the delivery location causes controlled rotation of the container.

10. *(original)*

A method according to claim 1, wherein said identification is made of articles being empty packaging units elected from the group of cans (2) of metal or plastic, and bottles (1; 87; 109) of plastic or glass.

11. *(original)*

A device for individually transporting articles (1; 2; 87;109) of different type, size, weight, material or shape to one delivery location (3, 4, 5: 6, 7) of a plurality of delivery locations that is designated for the respective article, a plurality of transport containers (10; 60; 74, 79; 82; 99) being arranged to move in spaced apart relation along a transport path as an endless, moving row of containers, characterised in :

- an article recognition means (20, 22, 23) for identifying each article as regards its type of material prior to a location at which the articles are to be placed one by one in a respective transport container to yield only one article per container;
- at least one television camera which is located to inspect the articles one by one to establish that just one article is placed or is present in a respective dedicated transport container;

and

- a container actuating means (15 -17; 61; 81; 88-92; 93-96; 107,108) mounted at each of said plurality of said delivery locations, a respective one of said actuating means in one state capable of entering into activated position related to a designated delivery location for an identified article, to cooperate with a respective transport container so as to cause removal of the identified article from the container at its designated delivery location, said actuating means in a second state controllable to be in an inactive position to selectively allow a container to pass the delivery location related to said respective actuating means when a container contains an article not designated for delivery thereat.

12. *(original)*

A device according to claim 10, wherein

- that the transport container (10) at a delivery location designated for an article is arranged to cooperate with a means (15; 16; 17) at the delivery location for emptying the transport container in the course of rotating the container through a 360° about an axis of rotation thereof so as to discharge the article under the effect of gravity.

13. *(original)*

A device for individually transporting articles (1; 2; 87;109) of different type, size, weight, material or shape to one delivery location (3, 4, 5: 6, 7) of a plurality of delivery locations that is designated for the respective article, a plurality of transport containers (10; 60; 74, 79; 82; 99) being arranged to move in spaced apart relation along a transport path as an endless, moving row of containers, said device characterized in:

- an article recognition means (20, 22, 23) for identifying each article as regards its type of material prior to a location at which the articles are to be placed one by one in a respective transport container to yield only one article per container;
- a container actuating means (15 -17; 61; 81; 88-92; 93-96; 107,108) for discharging the respective article (1; 2) at its designated delivery location from its transport container to a collecting or storage bin, disintegrator or further conveyor (3, 4, 5; 6, 7) dedicated to the article, said discharging means causing the transport container (10) to rotate through an angle of 360° about an axis of rotation, so as to discharge the single article from the container under the effect of gravity.

14. *(original)*

A device for individually transporting articles (1; 2; 87;109) of different type, size, weight, material or shape to one delivery location (3, 4, 5: 6, 7) of a plurality of delivery locations that is designated for the respective article, a plurality of transport containers (10; 60; 74, 79; 82; 99) being arranged to move in spaced apart relation along a transport path as an endless, moving row of containers, said device characterized in:

- an article recognition means (20, 22, 23) for identifying each article (1; 2; 87; 109) as regards its type of material prior to a location at which the articles are to be placed one by one in a respective transport container to yield only one article per container;
- a container actuating means (15 -17; 61; 81; 88-92; 93-96; 107,108) causing discharging of a respective article (1; 2) at its designated delivery location from its transport container to a collecting or storage bin, disintegrator or further conveyor (3, 4, 5; 6, 7) dedicated to the article by inverting the transport container (10) in the course of rotating the container through an angle of 360° about an axis of rotation so as to discharge the single article from the container under the effect of gravity,
- said container actuating means (15 -17; 61; 81; 88-92; 93-96; 107,108) including a plurality of guide pins (41; 44-47) on the container for controlling the rotation of the transport container, at least one (41) of the guide pins being configured, upon cooperation with said actuating means (15; 16; 17) in the form of a moving guide flap located at the delivery location, to cause an initial turning of the container, and at least one additional guide pin (44-47) on the container being configured to co-operate with a toothed engaging element (40; 48-52) located stationary at the delivery location (3, 4, 5; 6, 7) to effect controlled rotation of the transport container.

15. *(currently amended)*

A device according to [~~anyone of claims 11—14~~] **claim 11** , wherein the transport containers have guide pins (41) on both sides of the container which form anti-rotation supports in at least parts of the horizontal portions of the transport path.

16 . *(currently amended)*

A device according to claim 11, [~~12 or 13~~],

- wherein a plurality of guide pins (41; 44-47) are provided on the container for controlling the rotation of the transport container, wherein at least one (41) of the guide pins is arranged, upon cooperation with said actuating means (15; 16; 17) in the form of a moving guide flap located at the delivery location, to cause an initial turning of the container, and wherein at least one additional guide pin (44-47) on the container is designed to co-operate with a toothed engaging element (40; 48-52) located stationary at the delivery location (3, 4, 5; 6, 7) to effect controlled rotation of the transport container.

17. *(original)*

A device according to claim 11, wherein said at least one television camera is placed above said transport path of the articles and cooperative with the article recognition means in order to establish at least one of the following further features:

discharging of an article (1; 2; 87;109) at designated article delivery location causes the transport container (10; 60; 74, 79; 82; 99) to be fully emptied,
the article (1; 2; 87;109) is not a strange article, and
the article (1; 2; 87;109) is in a unitary state when in its container (10; 60; 74, 79; 82; 99).

18. *(currently amended)*

A device according to claim 11 [~~or 17~~], wherein said at least one a television camera is linked to the article recognition means to provide inspection of the articles (1; 2; 87;109) from a location above the transport path of the articles.

19. *(currently amended)*

A device according to [~~anyone of claims 11—18~~] **claim 11**, wherein the transport containers (10; 60; 74, 79; 82; 99) are designed to receive articles (1; 2; 87;109) in the form of empty packaging units elected from the group of : a) cans of metal or plastic, and b) bottles of plastic or glass.

20. *(currently amended)*

A device according to [~~anyone of claims 11—19~~] **claim 11**,

- wherein a pair of chains or lines (29, 30; 62, 63; 77, 78; 85, 86; 104, 105) are provided to drive the containers (10; 60; 74, 79; 82; 99) through the transport path, said pair of chains or lines interacting with two pulling, rigidly interconnected, powered drive wheels (25; 26) around which the chains or lines are partly run;
- wherein holders (32, 33) on the chains or lines are designed for successive cooperation with corresponding recesses (25'; 26'; 34'; 35'; 36'; 37'; 38'; 39') in respective guide wheels (25; 26; 34; 35; 36; 37; 38; 39) for synchronous movement of said chains or lines; and
- wherein at least some of opposite pairs of said holders provide support for a pair of bearing pins (31) on the containers.